

## Claims

1. In a network having interconnected nodes with data tuples that represent nodal connections, a method for mapping a network topology by identifying changes between an existing topology and a new topology, the method comprising:
  - converting an existing topology into a list of existing tuples that represent existing nodal connections;
  - receiving new tuples that represent new nodal connections; and
  - comparing the list of existing tuples with the new tuples to identify changes to the topology.
2. The method of claim 1, further comprising updating a topology database with a new topology.
3. The method of claim 1, further comprising taking action on the changes to the topology.
4. The method of claim 1, wherein the tuples include information about a host identifier, a connector interface, and a port specification.
5. The method of claim 1, wherein the step of comparing comprises identifying duplicate tuples that appear both in the list of existing tuples and in the new tuples, and maintaining a current status of the topology for these tuples.
6. The method of claim 1, wherein the step of comparing comprises identifying a swapped port condition on a connector.
7. The method of claim 1, wherein the step of comparing comprises searching for a host of a new singly-heard host link tuple or a new multi-heard host link tuple in the list of existing tuples.
8. A system for mapping a network topology by identifying changes between an existing topology and a new topology, based on changes to data tuples that represent nodal connections comprising:
  - a topology database that stores an existing topology of a network; and

1 a topology converter connected to the topology database that receives new tuples that  
2 represent new nodal connections; and compares the new tuples with the existing topology to identify  
3 changes in the network.

4 9. The system of claim 8, wherein the topology converter converts the existing  
5 topology into a list of existing tuples that represent existing nodal connections.

6 10. The system of claim 8, wherein the topology converter updates the topology  
7 database with a new topology based on the new tuples.

8 11. The system of claim 8, wherein the topology converter attempts to identify swapped  
9 ports on connectors.

10 12. The system of claim 8, wherein the topology converter identifies duplicate tuples  
11 that appear both in the list of existing tuples and in the new tuples, and maintains a current status of  
12 the topology for these tuples.

13 13. The system of claim 8, wherein the topology converter searches for a host of a new  
14 singly-heard host link tuple or a new multi-heard host link tuple in the list of existing tuples.

15 14. The system of claim 8, wherein the topology converter searches for a connector of  
16 a new conflict links tuple in the list of existing tuples.

17 15. A computer-readable medium having computer-executable instructions for  
18 performing a method for mapping a network topology by identifying changes between an existing  
19 topology and a new topology in a network having a interconnected nodes, the method comprising:

20 converting an existing topology into a list of existing tuples that represent existing nodal  
21 connections;

22 receiving new tuples that represent new nodal connections;

23 comparing the list of existing tuples with the new tuples to identify changes to the topology;

24 and

25 updating a topology database with a new topology.

26 16. The method of claim 15, wherein a topology converter receives the new tuples from  
27 a connection calculator that calculates connections between nodes.

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- 1           17.     The method of claim 15, wherein the step of comparing comprises identifying  
2     duplicate tuples that appear both in the list of existing tuples and in the new tuples, and maintaining a  
3     current status of the topology for these tuples.
- 4           18.     The method of claim 15, wherein the step of comparing comprises identifying a  
5     swapped port condition on a connector.
- 6           19.     The method of claim 15, wherein the step of comparing comprises searching for a  
7     host of a new singly-heard host link tuple or a new multi-heard host link tuple in the list of existing  
8     tuples.
- 9           20.     The method of claim 15, wherein the step of comparing comprises searching for a  
10    connector of a new conflict links tuple in the list of existing tuples.